

# EUROPEAN PATENT OFFICE

## Patent Abstracts of Japan

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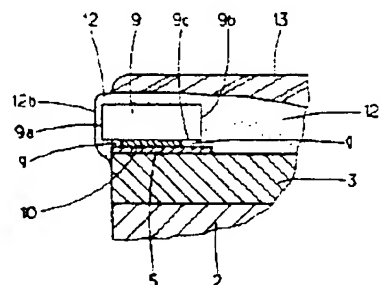
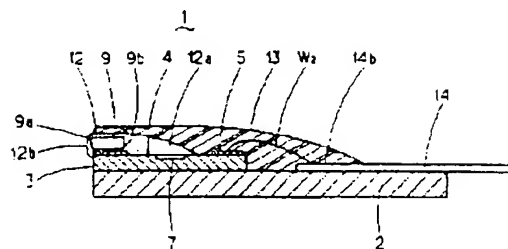
APPLICATION DATE : 14-05-90  
APPLICATION NUMBER : 02123587

APPLICANT : ROHM CO LTD;

INVENTOR : NAKADA NAOTARO;

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TITLE : LASER DIODE



ABSTRACT : PURPOSE: To isolate the forward cleavage surface of a laser diode chip from the outside air and to contrive the improvement of the environmental resistance, in particular the humidity resistance, of the chip by a method wherein the forward cleavage surface of the chip is covered with a transparent resin.

CONSTITUTION: A laser diode chip 9 is covered with a transparent resin 12. The resin 12 is not only applied on a forward cleavage surface 9a but also is extended to the rear of the chip 9 and constitutes a solid waveguide 12a to link a backward cleavage surface 9a with a monitor element 7. An epoxy resin, a silicone resin or the like is used as the resin 12 and these resins are formed into a liquid state and are adhered on the chip 9. A flat surface is formed of this liquid resin on the surface 9a by the surface tension of the resin and the interior of a gap (g) between the bottom 9c of the chip and the upper surface of a submount 3 is filled with the resin by capillarity. In this state, when the resin is cured, the resin is cured as the flatness of the resin surface is held on the surface 9a and a flat emission surface 12b is formed. Moreover, the whole chip 9 is sealed with the resin 12.

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